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CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210				MORRISON, JAY A
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,057	TING ET AL.	
	Examiner	Art Unit	
	JAY A. MORRISON	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 October 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11, 17-34 and 36-41 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-11, 17-34 and 36-41 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/22/09</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/21/2009 has been entered.

Remarks

2. Claims 1-11, 17-34 and 36-41 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orwant et al. ('Orwant' hereinafter) (*Mastering Algorithms with Perl*, by Jon Orwant et al., Publisher: O'Reilly Media, Inc., Pub Date: August 20, 1999, ISBN-10: 1-565-92398-7) in view of Musser (*Rationale for Adding Hash Table to the C++ Standard Template Library*, by David R. Musser, Computer Science Department, Rensselaer Polytechnic Institute, February 1995).

As per claim 22, Orwant teaches

A method for comparing a first data set with a second data set, comprising:
(section 6.4, first paragraph)

(a) selecting an entry from the first data set; (b) determining if a value of the selected entry of the first data set is in a table, wherein the table comprises one or more values of the first data set; (set a, section 6.4.2)

(c) adding, in response to determining that the value of the selected entry of first data set is not in the table, the value of the selected entry of the first data set to the table; (d) removing from the table, in response to determining that the value of the selected entry of the first data set is in the table, the value of the selected entry of the first data set; (set intersection, section 6.4.3)

(e) selecting an entry from the second data set; (set b, section 6.4.2)

(f) determining if a value of the selected entry of the second data set is in the table, wherein the table further comprises one or more entries of the second data set;

(g) adding, in response to determining that the value of the selected entry of the second data set is not in the table, the value of the selected entry of the second data set to the table; (set intersection, section 6.4.3)

(i) continuing (a) through (d) and (e) through (h) respectively for all entries in the first and second data sets until both the first and the second data sets have been completely processed; and (j) reporting a difference between the first data set and the second data set in response to at least one value remaining in the table. (subroutine for set differences between two sets, section 6.4.3)

Orwant does not explicitly indicate “hash”, “hashed”, “hash table”.

However, Musser discloses “hash”, “hashed”, “hash table” (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of “hash”, “hashed”, “hash table” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

Neither Orwant nor Musser explicitly indicate “(h) removing from the table, in response to determining that the value of the selected entry of the second data set is in the table, the hash value of the selected entry of the second data set”

However, Lou discloses “(h) removing from the table, in response to determining that the value of the selected entry of the second data set is in the table, the hash value of the selected entry of the second data set” (delete entry from hash table, figure 8, item 814).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and Lou because using the steps of “(h) removing from the table, in response to determining that the value of the selected entry of the second data set is in the table, the hash value of the selected entry of the second data set” would have given those skilled in the art the tools to improve the invention by techniques that compare data from test reports that is more user-friendly and requires fewer man-hours and less actual elapsed time. This gives the user the advantage of more efficient use of processing power.

As per claim 23, Orwant teaches

adding the value of the selected entry of the first data set to the table further comprises adding information with the hashed value of the selected entry of the first data set identifying the value of the selected entry of the first data set as originating from the first data set. (symmetric difference, section 6.4.3)

Orwant does not explicitly indicate "hashed", "hash table".

However, Musser discloses "hashed", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hashed", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 24, Orwant teaches

adding the value of the selected entry of the second data set to the table further comprises adding information with the value of the selected entry of the second data set identifying the value of the selected entry of the second data set as originating from the second data set. (symmetric difference, section 6.4.3)

Orwant does not explicitly indicate "hashed", "hash table".

However, Musser discloses "hashed", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of “hashed”, “hash table” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 25, Orwant teaches

Neither Orwant nor Musser explicitly indicate “the data are organized by a RAID system”

However, Lou discloses “the data are organized by a RAID system” (column 13, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and Lou because using the steps of “the data are organized by a RAID system” would have given those skilled in the art the tools to improve the invention by techniques that compare data from test reports that is more user-friendly and requires fewer man-hours and less actual elapsed time. This gives the user the advantage of more efficient use of processing power.

As per claim 26, Orwant teaches

(k) recording all value entries remaining in the table as being unique to either the first data set or the second data set. (symmetric difference, section 6.4.3)

Orwant does not explicitly indicate “hashed”, “hash table”.

However, Musser discloses “hashed”, “hash table” (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of “hashed”, “hash table” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claims 27-28,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 10-11 and are similarly rejected.

5. Claims 1-11, 17-21, 29-31 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orwant et al. ('Orwant' hereinafter) (*Mastering Algorithms with Perl*, by Jon Orwant et al., Publisher: O'Reilly Media, Inc., Pub Date: August 20, 1999, ISBN-10: 1-565-92398-7) in view of Musser (*Rationale for Adding Hash Table to the C++ Standard Template Library*, by David R. Musser, Computer Science Department, Rensselaer Polytechnic Institute, February 1995) and further in view of rsync (*rsync* Unix command manual page, version 2.4.1, February 2000) and further in view of Lou (Patent Number 7,096,421).

As per claim 1, Orwant teaches

A method for comparing a first directory comprising unique elements with a comprising unique elements, comprising: (section 6.4, first paragraph)

(a) for each entry in the first directory, placing a value of the entry in a table, wherein the first is stored on a source storage system; (set a, section 6.4.2)

(b) selecting an entry from the second, wherein the second is located on a destination storage system; (set b, section 6.4.2)

(c) looking up a match between a value of the selected entry and the value of the entry in the table;(e) determining if an additional second entry exists;(f) looping to step (b) in response to identifying the additional second entry; and (g) reporting a difference between the first and the second in response to at least one value entry remaining in the table. (subroutine for set differences between two sets, section 6.4.3)

Orwant does not explicitly indicate "hash", "hash table".

However, Musser discloses "hash", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

Neither Orwant nor Musser explicitly indicate "directory".

However, rsync discloses "directory" (OPTIONS section).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of

“directory” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

Neither Orwant, Musser nor rsync explicitly indicate “(d) removing, in response to the match between the value of the selected entry and the value of the entry in the table, the value of the entry from the table”

However, Lou discloses “(d) removing, in response to the match between the value of the selected entry and the value of the entry in the table, the value of the entry from the table” (delete entry from hash table, figure 8, item 814).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser, rsync and Lou because using the steps of “(d) removing, in response to the match between the value of the selected entry and the value of the entry in the table, the value of the entry from the table” would have given those skilled in the art the tools to improve the invention by techniques that compare data from test reports that is more user-friendly and requires fewer man-hours and less actual elapsed time. This gives the user the advantage of more efficient use of processing power.

As per claim 2, Orwant teaches identifying, in response to not locating the match between the value of the selected entry and the value of the entry in the table, that the selected entry is second unique. (section 6.4.1; figure 6-8)

Orwant does not explicitly indicate "hash", "hash table".

However, Musser discloses "hash", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

Neither Orwant nor Musser explicitly indicate "directory".

However, rsync discloses "directory" (OPTIONS section).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of "directory" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 3, Orwant teaches

performing, in response to not locating the match between the value of the selected entry and the value of the entry in the table, a remedial function. (symmetric difference, section 6.4.3)

Orwant does not explicitly indicate "hash", "hash table".

However, Musser discloses "hash", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 4, Orwant teaches the remedial function comprises deleting the selected entry of the second. (delete in symmetric difference, section 6.4.3)

Neither Orwant nor Musser explicitly indicate "directory". However, rsync discloses "directory" (OPTIONS section). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of "directory" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 5, Orwant teaches identifying in response to no additional entry existing, any remaining value entry in the table data as being first unique.(section 6.4.3)

Orwant does not explicitly indicate "hash", "hash table".

However, Musser discloses "hash", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

Neither Orwant nor Musser explicitly indicate "directory".

However, rsync discloses "directory" (OPTIONS section).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of "directory" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 6, Orwant teaches performing in response to no additional entry existing, a remedial function.
(symmetric difference, section 6.4.3)

As per claim 7, Orwant teaches the remedial function comprises deleting the selected entry of the first.
(symmetric difference, section 6.4.3)

Neither Orwant nor Musser explicitly indicate "directory".

However, rsync discloses "directory" (OPTIONS section).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of “directory” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 8, Orwant teaches

the remedial function comprises transferring the selected entry from the first to the second. (symmetric difference, section 6.4.3)

Neither Orwant nor Musser explicitly indicate "directory".

However, rsync discloses “directory” (OPTIONS section).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser and rsync because using the steps of “directory” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 9, Orwant teaches

Neither Orwant, Musser nor rsync explicitly indicate “the data are organized by a RAID system”

However, Lou discloses “the data are organized by a RAID system” (column 13, lines 10-15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant, Musser, rsync and Lou because using the steps of "the data are organized by a RAID system" would have given those skilled in the art the tools to improve the invention by techniques that compare data from test reports that is more user-friendly and requires fewer man-hours and less actual elapsed time. This gives the user the advantage of more efficient use of processing power.

As per claim 10, Orwant teaches

the table comprises a B-tree. (b-tree, section 3, first page)

Orwant does not explicitly indicate "hash table".

However, Musser discloses "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claim 11, Orwant teaches

the table comprises a fast lookup data structure. (section 3, first page)

Orwant does not explicitly indicate "hash table".

However, Musser discloses "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Orwant and Musser because using the steps of "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of processing of entries. This gives the user the advantage of better use of computing resources.

As per claims 17-18,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 1-2 and are similarly rejected.

As per claim 19-21,

These claims are rejected on grounds corresponding to the arguments given above for rejected claim 1 and are similarly rejected.

As per claims 29-31,

These claims are rejected on grounds corresponding to the arguments given above for rejected claims 12-13 and 16 and are similarly rejected.

As per claim 39, rsync teaches

the step of reporting comprises recording the difference on a disk. (OPTIONS SUMMARY section)

6. Claims 32-34, 36-38 and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over rsync (rsync Unix command manual page, version 2.4.1, February 2000) in view of Musser (Rationale for Adding Hash Table to the C++ Standard Template Library, by David R. Musser, Computer Science Department, Rensselaer Polytechnic Institute, February 1995) and further in view of Lou (Patent Number 7,096,421).

As per claim 32, rsync teaches

A system for performing a consistency check of a source directory replicated to a destination directory by comparing entries in the source and destination directories, comprising: (DESCRIPTION section)

one or more storage devices configured to store one or more entries of a group consisting of the source directory and the destination directory; (USAGE section)

and a process configured to compare entries in the source directory with entries in the destination directory by storing a value of each entry of the source directory and the destination directory in a table, any value of the source directory and the destination directory walking, (OPTIONS section, -r command; ‘configured to’ indicates intended use; Minton v. Nat'l Ass'n of Securities Dealers, Inc., 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003) “whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited.”

Examples of claim language, although not exhaustive, that may raise a question as to

the limiting effect of the language in a claim are: (A) “adapted to” or “adapted for” clauses; (B) “wherein” clauses; and (C) “whereby” clauses. Therefore intended use limitations are not required to be taught, see MPEP § 2106 Section II(C), MPEP 2111.04 [R-3], hereinafter *intended use*)

rsync does not explicitly indicate “hash”, “hash table”.

However, Musser discloses “hash”, “hash table” (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine rsync and Musser because using the steps of “hash”, “hash table” would have given those skilled in the art the tools to improve the invention by allowing quicker determination of f entries. This gives the user the advantage of better use of computing resources.

Neither rsync nor Musser explicitly indicate “the process further configured to remove from the table any value which matches”

However, Lou discloses “the process further configured to remove from the table any value which matches” (delete entry from hash table, figure 8, item 814).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine rsync, Musser and Lou because using the steps of “the process further configured to remove from the table any value which matches” would have given those skilled in the art the tools to improve the invention by techniques that compare data from test reports that is more user-friendly and requires fewer man-hours and less actual elapsed time. This gives the user the advantage of more efficient use of processing power.

As per claim 33, rsync teaches

the process executes on a computer associated with the source directory.

(DESCRIPTION section)

As per claim 34, rsync teaches

the process executes on a computer associated with the destination directory.

(DESCRIPTION section)

As per claims 36,

This claim is rejected on grounds corresponding to the arguments given above for rejected claim 32 and is similarly rejected.

As per claim 37,

This claim is rejected on grounds corresponding to the arguments given above for rejected claims 1 and 32 and is similarly rejected.

As per claim 38, rsync teaches

alternate in selecting entries from the source and destination directories.

(OPTIONS section, -r command; “configured to” indicates intended use)

As per claim 40, rsync teaches

the step of reporting comprises recording the difference on a storage device.

(OPTIONS SUMMARY section)

As per claim 41, rsync teaches

the process is further configured to add to the table any value which does not match any value of the source directory and the destination directory. (OPTIONS SUMMARY section)

rsync does not explicitly indicate "hash", "hash table".

However, Musser discloses "hash", "hash table" (page 8, paragraph 9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine rsync and Musser because using the steps of "hash", "hash table" would have given those skilled in the art the tools to improve the invention by allowing quicker determination of f entries. This gives the user the advantage of better use of computing resources.

Response to Arguments

7. Applicant's arguments with respect to claim 1-11, 17-34 and 36-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record, listed on form PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jay A. Morrison whose telephone number is (571) 272-7112. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on (571) 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jay Morrison/

Jay Morrison
TC2100

Application/Control Number: 10/776,057
Art Unit: 2168

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